

REMARKS/ARGUMENTS

The Office Action mailed May 19, 2006 has been carefully reviewed. For the reasons below, Applicant respectfully submits that the pending claims are novel and non-obvious over the cited prior art., and are thus in condition for allowance.

Claim Rejections under 35 USC §102(e)

In the Office Action mailed May 19, 2006, claims 1, 5, 12, 20, 25, and 27 were rejected under 35 U.S.C. 102(e) as being anticipated by Auranen et al. U.S. Published Patent Application No. 2003/0162543.

Auranen et al. is directed to completing a handover between two cells entirely within the 39 seconds of downtime between two transmission bursts. The portion cited by the Office Action merely indicates that the mobile terminal in Auranen et al. could perform the handover between the first and second bursts, or between the second and third bursts, but makes no mention of a transmission burst from the current cell after a handover decision is made. Auranen et al. states:

[0020] When a hand-over is required in the broadcasting system 30, the hand-over is performed only during one of these approximately 39-second time intervals which occur between transmission bursts of a selected service provider. The 39-second time interval allows the mobile terminal 39 to initiate and complete the switch from one transmitter signal to another without causing an interrupt in the received signal. For example, the mobile terminal 39 can elect to receive the transmission burst 43a, can then switch to receive one of the transmission bursts 45b or 45c, and can then switch again to receive any one of the transmission bursts 47a or 47b or 47c by selectively passing the frequency of whichever of the transmitters 31-35 is providing the best signal at any particular time. The disclosed system and method thus provide for an interrupt-free hand-over to be initiated and completed during a time interval in which no data transmission is expected from a selected service provider.

[0021] When located in the wireless cell 11, the mobile terminal 39 will typically receive the service signal 41a from the first transmitter 31 as the best signal. However, as the mobile terminal 39 moves from the wireless cell 11 into the wireless cell 13, the received signal strength of the service signal 41a may drop to a value less than the received signal strength of the service signal 41b. Accordingly, when such a signal attenuation occurs or another predefined service signal criterion is met, as described in greater detail below, the mobile terminal 39 may change from receiving the frequency of the first transmitter 31 broadcasting

the service signal 41a to receiving the frequency used by the second transmitter 33 broadcasting service signal 41b.

[0022] If the predefined service signal criterion is met after the mobile terminal 39 has input the signal provided by the transmission burst 43a, for example, the change in frequency will preferably occur in the time interval between a termination point 51 of the transmission burst 43a (here shown at $t=1$ sec) and an initiation point 53 of the next transmission burst 45b (here shown at $t=40$ sec). In this way, the mobile terminal 39 receives each of the transmission bursts 43a and 45b in their entirety and thus incurs no interrupts during hand-over, if any, from one burst terminal to another. Alternatively, if the mobile terminal 39 had already input the transmission burst 45a, and the predefined criterion has been met, the change in frequency would instead occur between a termination point 55 of the transmission burst 45a and an initiation point 57 of the next transmission burst 47b (here shown at $t=80$ sec).

Thus, Auranen et al. teaches that after a decision to hand-over has been made to a selected candidate cell, the next burst comes from the new transmitter of the selected candidate cell, and is not a final burst from the old transmitter or first base station.

Claim 1 claims:

1. A method for a wireless terminal performing a handover from a first cell to another cell in a wireless system, comprising: (A) receiving a first channel burst from a first base station on a wireless channel, wherein the first base station serves the first cell and wherein the first channel burst supports a data service; (B) determining whether a serving signal quality associated with the first cell satisfies a handover criterion; (C) in response to (B), obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell; (D) if a selected signal quality is acceptable, deciding to perform the handover to a selected candidate cell, wherein the selected candidate cell is a member of the list and wherein the selected signal quality corresponds to the selected candidate cell; (E) after performing (D), receiving a final channel burst from the first base station; and (F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station, wherein the selected candidate base station is serving the selected candidate cell. [Emphasis added].

Because Auranen et al. does not disclose step (E) of claim 1 of the present application, claim 1 is not anticipated by Auranen et al. Independent claims 20 and 25 of the present application contain similar language as claim 1, and are novel over Auranen et al. The remaining

claims rejected under 35 U.S.C. 102(e) are dependent upon independent claims 1 and 20 and 25, and are thus novel over Auranen et al. for at least the same reasons that claims 1 and 20 are novel over Auranen et al.

Claim Rejections under 35 USC §103(a)

Claims 1-3, 5, 6, 15-21 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. (U.S. Published Patent Application No. 2003/0162535) in view of Jonsson (U.S. Patent No. 5,513,246).

Claims 4, 7-13, 22-24, 26 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. (U.S. Published Patent Application No. 2003/0162535) in view of Jonsson (U.S. Patent No. 5,513,246) and further in view of Chen et al. (U.S. Patent No. 6,731,936).

Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiyama et al. (U.S. Published Patent Application No. 2003/0162535) in view of Jonsson (U.S. Patent No. 5,513,246) and further in view of Bolgiano et al. (U.S. Patent No. 6,366,568).

The Office Action did not cite Nishiyama by number. The Examiner provided the publication number for Nishiyama when the undersigned contacted the Examiner on June 23, 2006 and asked for the number.

As recognized in the Office Action, Nishiyama does not teach “the method of obtaining measurements associated with a list of candidate cells, wherein the list comprises at least one candidate cell and wherein each measurement gauges a corresponding signal quality that is provided by a corresponding candidate cell, (E) after performing (D), receiving a final burst from the first base station; and (F) in response to (E), performing the handover to the selected candidate cell and receiving a new channel burst from a selected candidate base station, wherein the selected candidate base station is receiving the selected candidate cell.”

Jonsson does satisfy the deficiencies Nishiyama. Contrary to the Office Action, Jonsson does not teach after performing (D), receiving a final channel burst from the first base station. Rather, the portion of Jonsson cited in the Office Action, Col. 9, lines 60-67, and Col. 10, lines 1-10 states as follows:

After the cell candidate list has been prepared, a check is made to assure that, if a handoff has been previously attempted but unsuccessfully, a specified minimum amount of time T_ALLOC_REP since the previous allocation failure of a channel in the handoff candidate cell has elapsed (S15). Insisting upon a waiting time until the next allocation attempt increases the likelihood of that allocation attempt being successful. If the required minimum amount of time has not expired, the locating routine returns to wait for the next appropriate evaluation time.

Assuming that the time limitation is satisfied, the locating routine then checks to see if there is a better cell in terms of lower path loss or greater signal strength than the present cell (S17). In other words, the routine checks to see if the present cell is highest ranked among the measured cells or if one or more cells are ranked above it. If the present cell remains the best cell, the locating routine returns to wait for the next appropriate evaluation time.

Jonsson further states at Col 10, lines 11-29:

If the present cell is not the best cell, the mobile services center then tries to allocate a channel in each of the better cells in turn in order of their ranking until either the allocation is successful or the present cell is the next-best cell according to its ranking (S19). If a channel cannot be allocated, an allocation failure time is set (S23) to ensure that the minimum specified amount of time will elapse before the next allocation attempt.

If a channel is successfully allocated, a handover to the corresponding cell is then attempted (S25). The present base station waits to learn the results of the handover attempt, and if the handover was successful (S29), relinquishes communications with the mobile station in favor of its successor base station. If the handover was unsuccessful (S31), the base station resumes communication with the mobile station over the same channel as was used previously. The locating routine then returns to wait for the next appropriate evaluation time.

Thus, Jonsson does not teach "after performing (D), receiving a final channel burst from the first base station." For at least this reason, claim 1 of the present application is patentable over the proposed combination of Nishiyama and Jonsson, even if the proposed combination is deemed proper.

The remaining independent claims have this same limitation that is not taught by the proposed combination of Nishiyama and Jonsson. See claims 20, 25 and 27.

The remaining claims all depend, either directly or indirectly, from either independent claims 1, 20, or 25, and as such, are distinguishable for at least the same reasons as their base claims, and further in view of the various features recited therein.


For at least the above reasons, the pending claims are patentable over the 103(a) rejections, all of which are bottomed on the proposed combination of Nishiyama and Jonsson.

Conclusion

Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. Should the Examiner believe that a conversation with Applicants' representative would be useful in the prosecution of this case, the Examiner is invited and encouraged to call Applicants' representative.

Respectfully submitted,

Dated: August 21, 2006

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